

## **REMARKS**

### **THE EXAMINER INTERVIEW**

Applicant thanks Examiner's Jones and Lu for the courtesies extended during the Examiner Interview held at the Office on Tuesday, February 8, 2005. During this interview, proposed claim amendments in response to the outstanding Office Action were discussed. The primary topic of discussion was Examiner Lu's concern that the recitation of the variable position in claim 1 represented new matter in violation of the written description requirement of 35 U.S.C. § 112, first paragraph. After discussing the disclosures at pages 6, 18, 23-25, and 31-33, it was agreed that because page 32, first paragraph, of the specification teaches the incorporation of dP and 8-oxo-dG into nucleic acid probes, the only logical position to incorporate degenerate nucleotides into the probes is at a variable position. In light of the foregoing, it was agreed that the recitation of the variable position in claim 1 is not new matter.

### **THE AMENDMENT TO THE SPECIFICATION**

The paragraph at page 24, line 10, to page 9, line 6, of the specification has been amended to correct an obvious typographical error in the specification. Specifically, the shorthand for chemiluminescence (ChL) was misspelt as "CL" at page 24, lines 13 and 15, and thus, has been corrected with this amendment. No new matter is added to the application with these changes.

### **THE CLAIM AMENDMENTS**

Claim 1 has been amended to incorporate the subject matter of canceled claim 116 and to clarify that the at least two oligonucleotide probes having a variable position, wherein on at least one of the at least two oligonucleotide probes, the variable position is occupied by a degenerately base pairing nucleotide analog selected from the group consisting of dP and 8-oxo-dG and on at least one other of the at least two oligonucleotide probes, the variable position is occupied by a degenerately base pairing nucleotide analog selected from the group consisting of dP and 8-oxo-dG or a non-degenerately base pairing nucleotide. Support for the recitation that the variable position may be occupied by dP or 8-oxo-dG on at least one probe and dP, 8-oxo-dG, or a non-degenerate probe on at least one other probe is found in the specification at *inter alia* page 6, line 3, to page 7, line 17; page 18, lines 4-20; page 23, line 30, to page 26, line 8; and page 31, line 5, to page 33, line 4 (the disclosures at these sections of the specification are discussed below in more detail under the discussion in response to the Examiner's written description rejection).

Claims 7 and 10 have been amended to clarify that the target nucleic acid analyte hybridizes to the array of oligonucleotide probes. Support for the changes to claims 7 and 10 is found in the specification at *inter alia* page 6, lines 12-13; page 18, lines 21-27; page 20, lines 4-12; page 26, line 30, to page 27, line 13; the discussion of Brenner et al. at pp. 27-29; the discussion of Fodor and Drmanac at p. 33; page 45, lines 27-32; and Examples 6-8, and 10.

Claim 29 has been amended to remove the second occurrence of the word “target.” This amendment is also addressed below under the heading “Claim Objection.”

Claims 117 and 118 have been amended to remove superfluous language from claim 117 and to correct the language of the Markush group (i.e., to replace the “or” with an --and--) in claim 118.

No new matter has been added to the application with the amendments to the claims made here.

#### **CLAIM OBJECTION**

In the Office Action under reply, the Examiner objected to claim 29 because there were two occurrences of the word “target” in the claim. The second occurrence of the word has been removed with this amendment; accordingly, this objection is now moot.

#### **INDEFINITENESS REJECTION**

Claims 1, 6-15, 18-24, 27-31, 36-39, and 115-118 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Specifically, the Examiner references claim 10 as lacking antecedent basis with respect to the hybridization of the target nucleic acid analyte in claim 7.

Claims 7 now reads that the nucleic acid analyte hybridizes to the array and that the target sequence segment is determined by analysis of hybridization data from the array and claim 10 recites that the target sequence segment is detected by a label moiety. Support for the amendment to claims 7 and 10 is set forth above under the subheading “The Claim Amendments.”

The changes made to claim 7 and 10 more clearly define the invention recited therein; accordingly, applicant respectfully requests reconsideration and withdrawal of this rejection.

#### **WRITTEN DESCRIPTION REJECTION**

Claims 1, 6-15, 18-24, 27-31, 36-39, and 116-118 stand rejected under 35 U.S.C. § 112, first paragraph, as lacking an adequate written description; specifically, the Examiner asserts that there is no support for the recitation in the first wherein clause of claim 1 that the two oligonucleotides are identical except for a single variable position.

As a preliminary matter, applicant originally entered this language into the claims based upon the disclosure at pages 24 and 36 of the application, which shows that the sequences of the oligonucleotides are identical save the variable position. In response to the Examiner's rejection, and as discussed above under the heading "The Claim Amendments," applicant has removed the language objected to by the Examiner. The first wherein clause of claim 1 now recites that at least one of the at least two oligonucleotide probes, the variable position is occupied by a degenerately base pairing nucleotide analog selected from the group consisting of dP and 8-oxo-dG and on at least one other of the at least two oligonucleotide probes, the variable position is occupied by a degenerately base pairing nucleotide analog selected from the group consisting of dP and 8-oxo-dG or a non-degenerately base pairing nucleotide. As indicated above, support for this change is found in the specification at page 6, line 3, to page 7, line 17, which discloses that the degenerately pairing nucleotide positions correspond to a variable position (see in particular, page 6, lines 3-5, and page 7, lines 7-11); page 18, lines 4-20, which discloses how the probes with the variable position hybridize to the nucleic acid analyte; page 23, line 30, to page 26, line 8, which discloses the incorporate of the degenerate bases dP and 8-oxo-dG into the X positions, i.e., the variable positions, of the probes (see in particular, the sequences and associated discussions at page 24, line 10, to page 25, line 5, and page 25, line 24, to page 26, line 8); and page 31, line 5, to page 33, line 4, which discloses two probes, one of which has a variable position occupied by a dP and 8-oxo-dG and the other probe has a variable position occupied by dP, 8-oxo-dP, or a non-degenerate probe (see in particular, page 32, lines 9-25, which describes the use of the degenerate bases on one probe and the degenerate or non-degenerate bases on the other probe to obtain information on the position of interest).

As agreed upon in the Examiner Interview, with the change to claim 1 discussed herein, this claim and all claims dependent thereon are in condition for allowance. In light of the foregoing, applicant respectfully requests reconsideration and withdrawal of this rejection.

#### **ENABLEMENT REJECTION**

Claims 1, 6-15, 18-24, 27-31, 36-39, 117, and 118 stand rejected under 35 U.S.C. § 112, first paragraph, as not enabled. With the incorporation of the subject matter of claim 116 into claim 1, this rejection is rendered moot; accordingly, applicant respectfully requests withdrawal of this rejection.

#### **CONCLUSION**

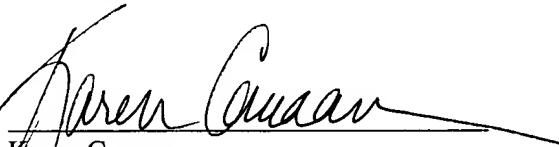
Because all of the claim objections and claim rejections set forth by the Examiner have been addressed and fully rebutted with the amendments and arguments set forth in this paper, applicants

respectfully request withdrawal of all claim objections and rejections and passage of this application to a patent grant. *See, In re Oetiker, supra.*

With the changes made in this paper, this application is in condition for allowance; accordingly, applicant respectfully requests reconsideration and withdrawal of all claim objections and rejections and passage of this application to issue. On this matter, applicant respectfully requests that the Examiner contact the undersigned attorney to resolve any additional issues that may affect the allowance of this application. The Examiner may contact the undersigned attorney at 650-330-4913 or at [canaan@reedpatent.com](mailto:canaan@reedpatent.com).

Respectfully submitted,

By.

A handwritten signature in black ink, appearing to read "Karen Canaan", written over a horizontal line.

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